

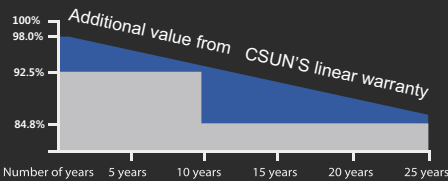
# Mars Series Half cell Modules

The power output shall not be less than 98.0% of the minimum power output stated in the product datasheet in the first year of the product's life cycle.

The loss of power output shall not exceed 0.55% per year thereafter, ending with 84.80% in the 25th year.

■ CSUN    ■ Standard warranty

CSUN's NEW linear performance warranty



# CSUN460-144M

High efficiency PERC tech for esthetic applications

Module Fire Performance: Type 1 (UL 1703)

Fire Resistance Rating: Class C (IEC 61730)

CSUN425-144M

CSUN430-144M

CSUN435-144M

CSUN440-144M

CSUN445-144M

CSUN450-144M

CSUN455-144M

CSUN460-144M

## 21.16%

Module efficiency

## 460W

Highest power output

## 12 Year

Material & workmanship warranty

## 25 Year

Linear power output warranty



Industry leading conversion efficiency



Certificated to withstand wind (2400Pa) and snow load (5400Pa)



Positive tolerance offer



Excellent performance under weak light condition



Passed salt mist & ammonia corrosion, blowing sand and hail testing



Good temperature coefficient enables better output in hot climates

**Munich RE**  
Munich Re providing Re in surance



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## Electrical Characteristics at Standard Test Conditions (STC)

Module Type	CSUN425-144M	CSUN430-144M	CSUN435-144M	CSUN440-144M	CSUN445-144M	CSUN450-144M	CSUN455-144M	CSUN460-144M
Maximum Power(Pmpp)[W]	425	430	435	440	445	450	455	460
Positive Power Tolerance[W]	0~5	0~5	0~5	0~5	0~5	0~5	0~5	0~5
Open Circuit Voltage(Voc)[V]	48.3	48.5	48.7	48.9	49.1	49.3	49.5	49.7
Short Circuit Current(Isc) [A]	11.22	11.30	11.37	11.44	11.52	11.59	11.66	11.73
Maximum Power Voltage(Vmpp)[V]	40.4	40.6	40.8	41.0	41.2	41.4	41.6	41.8
Maximum Power Current(Imp)[A]	10.52	10.60	10.67	10.74	10.81	10.88	10.94	11.01
Module Efficiency	19.55%	19.78%	20.01%	20.24%	20.47%	20.70%	20.93%	21.16%

Electrical data relates to standard test conditions(STC): irradiance 1000W/m<sup>2</sup>; AM1.5; cell temperature 25°C measuring uncertainty of power is within ±3%. Certified in accordance with IEC61215, IEC61730-1/2 and UL1703.

## Electrical Characteristics at Nominal Operating Cell Temperature(NOCT)

Module Type	CSUN425-144M	CSUN430-144M	CSUN435-144M	CSUN440-144M	CSUN445-144M	CSUN450-144M	CSUN455-144M	CSUN460-144M
Maximum Power(Pmpp)[W]	315	319	323	326	330	334	337	341
Open Circuit Voltage(Voc)[V]	45.0	45.2	45.3	45.5	45.7	45.9	46.1	46.3
Short Circuit Current(Isc) [A]	9.08	9.14	9.20	9.25	9.32	9.38	9.43	9.49
Maximum Power Voltage(Vmpp)[V]	37.4	37.6	37.7	37.9	38.1	38.3	38.5	38.7
Maximum Power Current(Imp)[A]	8.43	8.49	8.55	8.60	8.66	8.71	8.76	8.82

Electrical data relates to nominal operating cell temperature(NOCT): irradiance 800W/m<sup>2</sup>; wind speed 1m/s; cell temperature 45°C ambient temperature 20°C measuring uncertainty of power is within ±3%.

## Temperature Characteristics

Voltage Temperature Coefficient	-0.286%/°C
Current Temperature Coefficient	+0.057%/°C
Power Temperature Coefficient	-0.370%/°C

## Maximum Ratings

Maximum System Voltage(V)	1000/1500
Series Fuse Rating(A)	25
Reverse Current Overload(A)	25

## Mechanical Characteristics

Dimensions	2094×1038×35mm - frame thickness upon request
Weight	23.5kg
Frame	Anodized aluminum profile-black frame upon request
Front Glass	Toughened low iron glass,3.2mm
Cell Encapsulation	EVA(Ethylene-Vinyl-Acetate)
Back Sheet	Composite film-black back sheet upon request
Cell	144(6×24) monocrystalline solar semi-cells (166×83 )
Junction Box	Rated current≥13A, IP≥65, TUV&UL
Cable	Length 300mm,1×4mm <sup>2</sup>
Connector	MC4/compatible with MC4

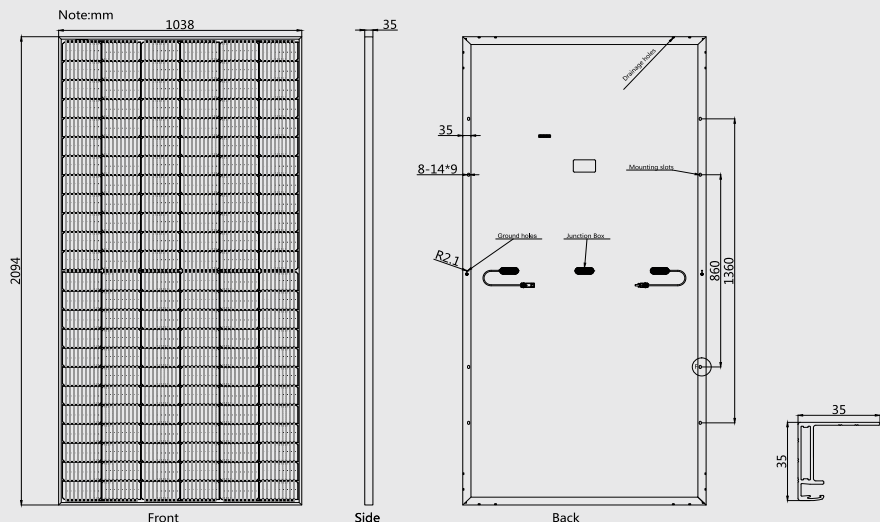
## Packaging

Container 20'	180pcs.
Container 40'	396pcs.
Container 40'HC	737pcs.

## System Design

Temp.Range	-40°F to +185°F(-40°C to +85°C)
Hail	Max. diameter of 0.98"(25mm)with impact speed of 51.2mph(23m/s)
Max.Capacity	Wind 2400Pa, snow 5400Pa-7200Pa upon request
Application Class	A
Safety Class	II

## Dimensions



## I-V Curves

